

## **What are the conditions in the Green Cove Creek Sub-watershed?**

### **Current conditions**

Approximately fourteen percent of the Green Cove Creek Sub-watershed is covered by urban land uses (see Figure 56 and 56a, Classification Percent Totals for Green Cove Creek Sub-watershed). Green Cove Creek has a drainage area of 4.3 square miles.

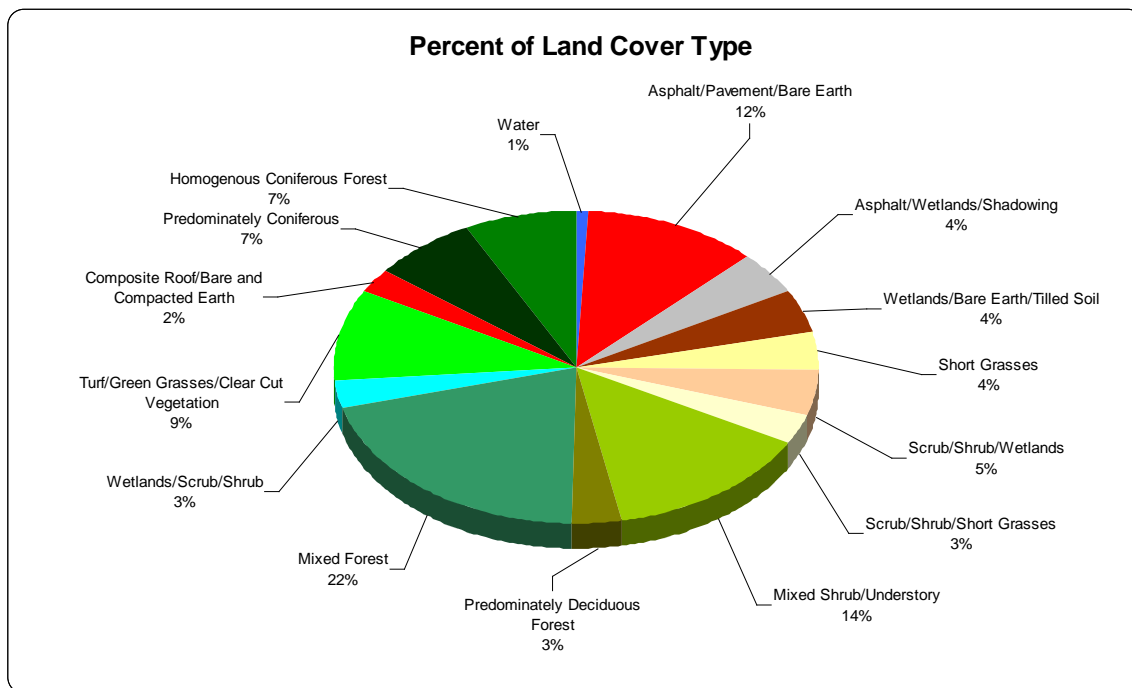


Figure 56a. Classification Percent Totals for Green Cove Creek Sub-watershed

Land cover data from 2005 SPOT imagery.

### **Human alteration to the movement of water**

The effects of human land use on the natural delivery of water to the Kennedy Creek and its tributaries in the Green Cove Creek Sub-watershed were characterized using the following landscape attributes: percent TIA, percent forest land, and percent wetland cover at the DAU scale. Results indicate that the Green Cove Creek Sub-watershed is in an “at risk” condition for the delivery of water, with one DAU in a “not properly functioning” condition.

### **Human alteration to the natural movement of sediment**

The effects of human land use on the natural delivery of sediment to the Green Cove Creek and its tributaries in the Kennedy Creek Sub-watershed were characterized using the following landscape attributes: percent bare soils, road density, and percent unstable slopes at the DAU

scale. However, because there are no forestry activities or unstable slopes in the sub-watershed, road density was the only applicable indicator. The result is a “properly functioning” and “at risk” condition for sediment.

### **Human alteration to the natural movement of large wood**

The effects of human land use on the natural delivery and routing of large wood in the Green Cove Creek and its tributaries were characterized using the following landscape attributes: percent forested riparian and average number of stream crossings per kilometer of stream at the DAU scale. Results indicate that the Green Cove Creek Sub-watershed is primarily in an “at risk” condition for the delivery and routing of large wood. Exceptions include three “properly functioning” and one “not properly functioning” DAUs.

### **Human alteration to the natural movement of pollutants**

The effects of human land use on the natural delivery and routing of pollutants in the Green Cove Creek and its tributaries were characterized using the following landscape attributes: Extent of 303(d) listed water bodies for nutrients, toxicants, and bacteria and condition and extent of wetlands at the DAU scale. Results indicate that the Green Cove Creek Sub-watershed is in an AR condition for the delivery and routing of pollutants. However, that is based on very limited data.

### **Human alteration to the natural movement of heat**

The effects of human land use on the natural delivery and routing of heat in the Green Cove Creek tributaries were characterized using the following landscape attributes: Extent of 303(d) listed water bodies for nutrients, toxicants, and bacteria, percent 67 meter riparian zone with mature canopy, road density, and percent TIA at the DAU scale. Results indicate that the Green Cove Creek Sub-watershed is primarily in an “at risk” condition for the delivery and routing of heat.

### **Aquatic integrity**

The effects of human land use on aquatic integrity in the Green Cove Creek and its tributaries in the Green Cove Creek Sub-watershed were characterized using the following landscape attributes: percent riparian forest, percent TIA, and available B-IBI scores at the DAU scale. Results indicate that the Green Cove Creek Sub-watershed is in an “at risk” condition for aquatic integrity. However, that is based on limited data.

### **Habitat Connectivity**

Forest covers 55 percent of the Green Cove Creek Sub-watershed, concentrated in the south west sub-watershed. The Green Cove Creek Sub-watershed is considered “at risk” and “properly functioning” for habitat connectivity.

## Ecological Benefit

All DAUs within the study area having ecological and biological processes that are considered “at risk” under current land use conditions were identified for further consideration. DAUs in the “at risk” category for multiple key ecological and biological processes are assumed to provide the greatest potential to maximize environmental benefits when restored. The process scores are then ranked according to the weight criteria, and converted to a high, medium, or low process rank. Green Cove Creek has primarily high and moderate ecological benefit, with only one DAU ranked as low (Figure 57. Green Cove Creek Sub-watershed Weighted Processes).

## Environmental Benefit

Once all the DAUs were ranked for their ecological benefit, all natural resource sites were ranked for their environmental benefit. Only the high and medium scoring sites were used in further evaluation to develop natural resource, fish habitat, and stormwater preservation and restoration sites.

**Table 16. Green Cove Creek Environmental Benefit Ranking of Natural Resource Sites**

Green Cove Creek Potential Restoration Sites				
Rank	Wetland	Riparian	Floodplain	Total
High	1	0	0	1
Medium	3	6	2	11
Low	18	11	4	33

The following wetlands, riparian and floodplain sections describe the environmental benefit ranking of the natural resource sites.

### Wetlands

Prior to human alteration, wetlands in the Green Cove Creek Sub-watershed totaled approximately 611 acres. We estimate that approximately 133 acres are currently wetlands or degraded/destroyed wetlands with some restoration potential. (Figure 58. Green Cove Sub-Watershed Resource Sites).

### Riparian condition

Development has encroached on approximately 116 acres of the 67-meter wide riparian corridors in the Green Cove Creek basin. Of the X acres, approximately 116 acres have some restoration potential (Figure 58. Green Cove Sub-Watershed Resource Sites).

### Floodplain Condition

Development has encroached on approximately 33 acres in the Green Cove Creek floodplain. Of the 96 acres, approximately 33 acres have some restoration potential (Figure 58. Green Cove Sub-Watershed Resource Sites).

## **Natural Resource Sites**

All potential natural resource sites were evaluated for their environmental benefit and ranked high, medium, or low. Following evaluation, a total of 12 sites were of high or medium environmental benefit (Figure 59. Green Cove Creek Ecological Processes and Resource Site Scoring).

## **Fish Habitat**

There were 17 sites evaluated for habitat value to salmonid fish species. These sites were then used to evaluate potential natural resource sites that have the potential to be stormwater retrofits sites. While the goal is to use natural resource sites as stormwater retrofit sites, we don't want to compromise high quality fish habitat sites.

## **Stormwater Retrofit**

All the natural resource sites were evaluated for stormwater retrofit sites (Figure 60. Green Cove Creek Potential Stormwater Restoration Sites).



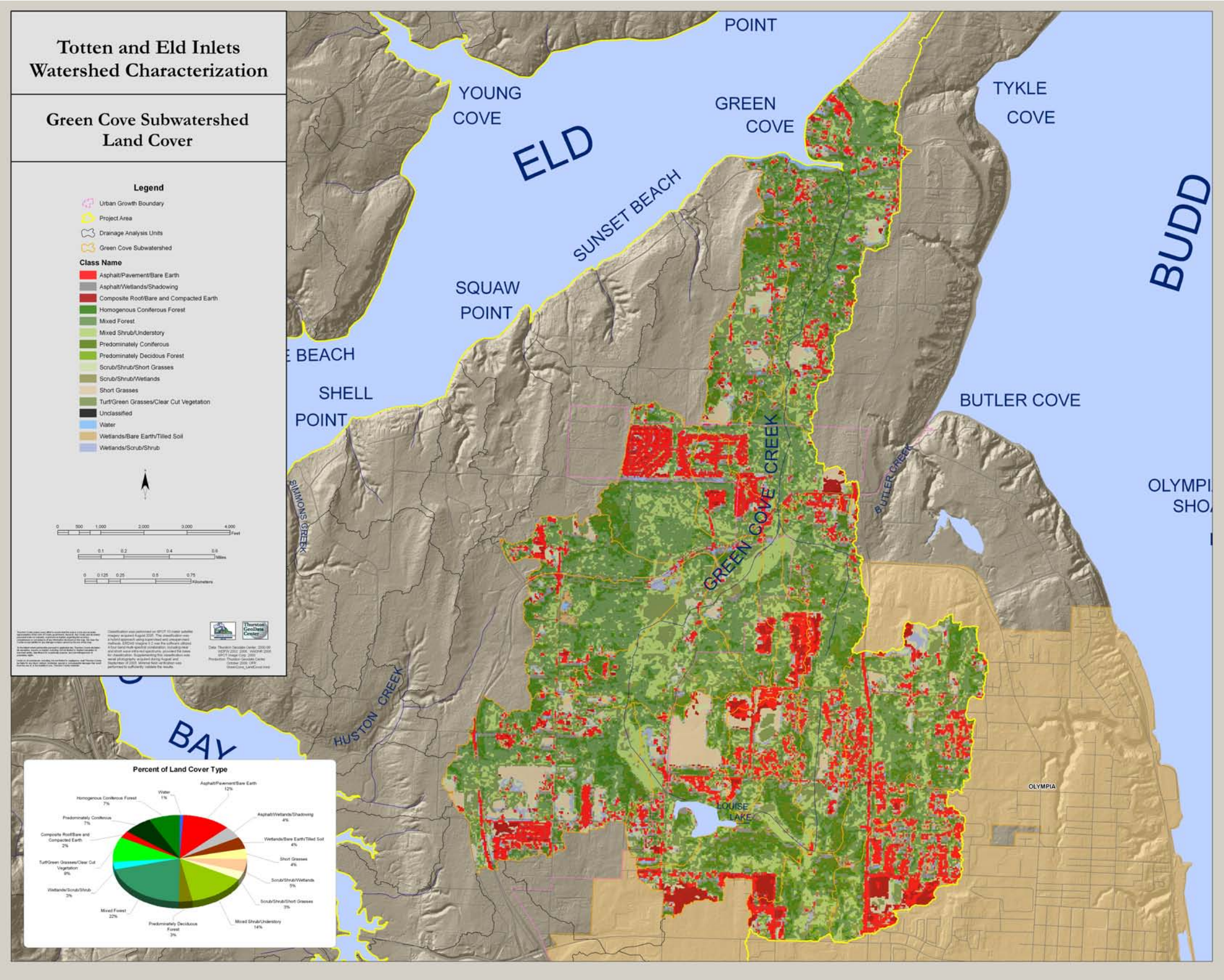
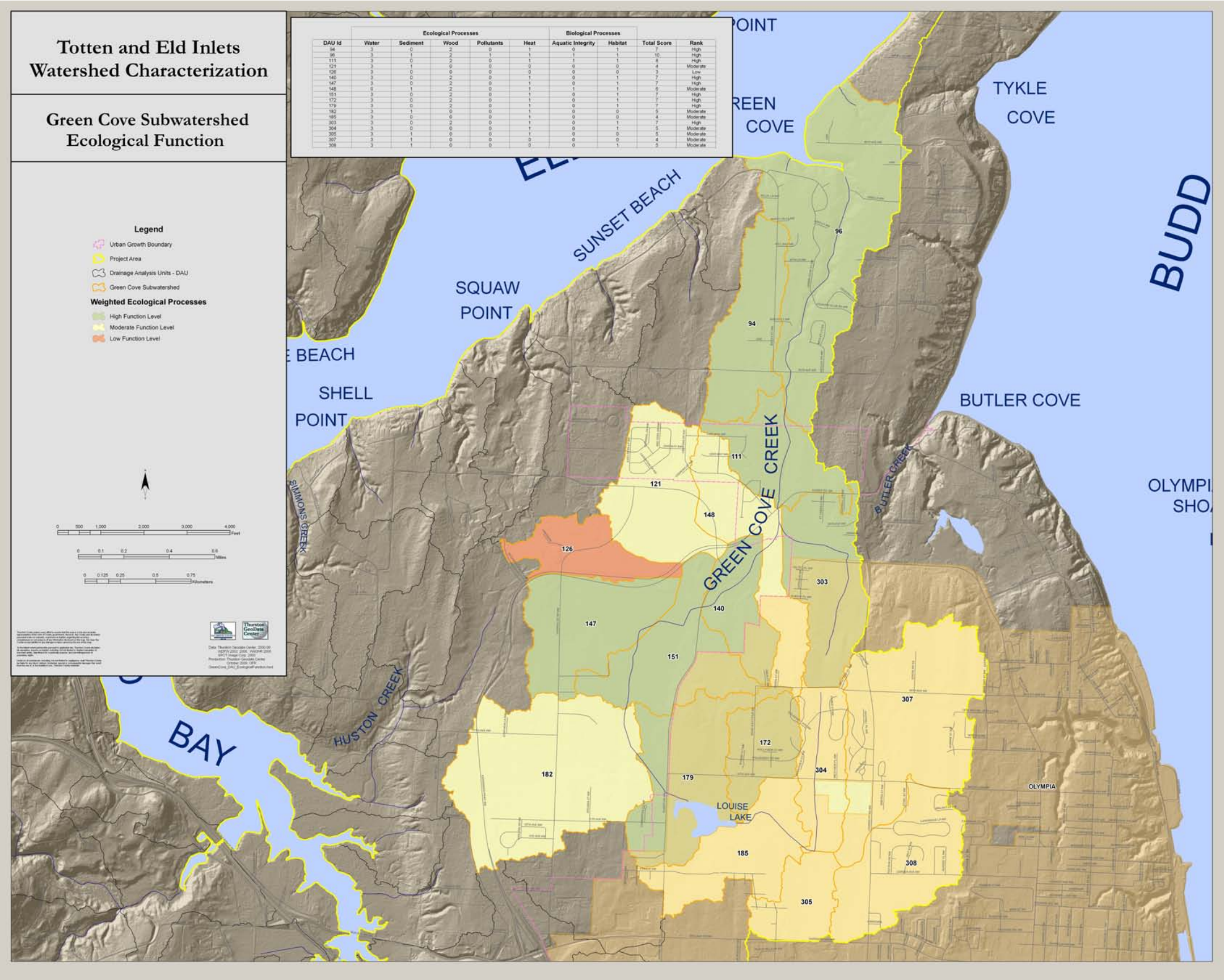


Figure 56 Green Cove Creek Sub-watershed Land Cover







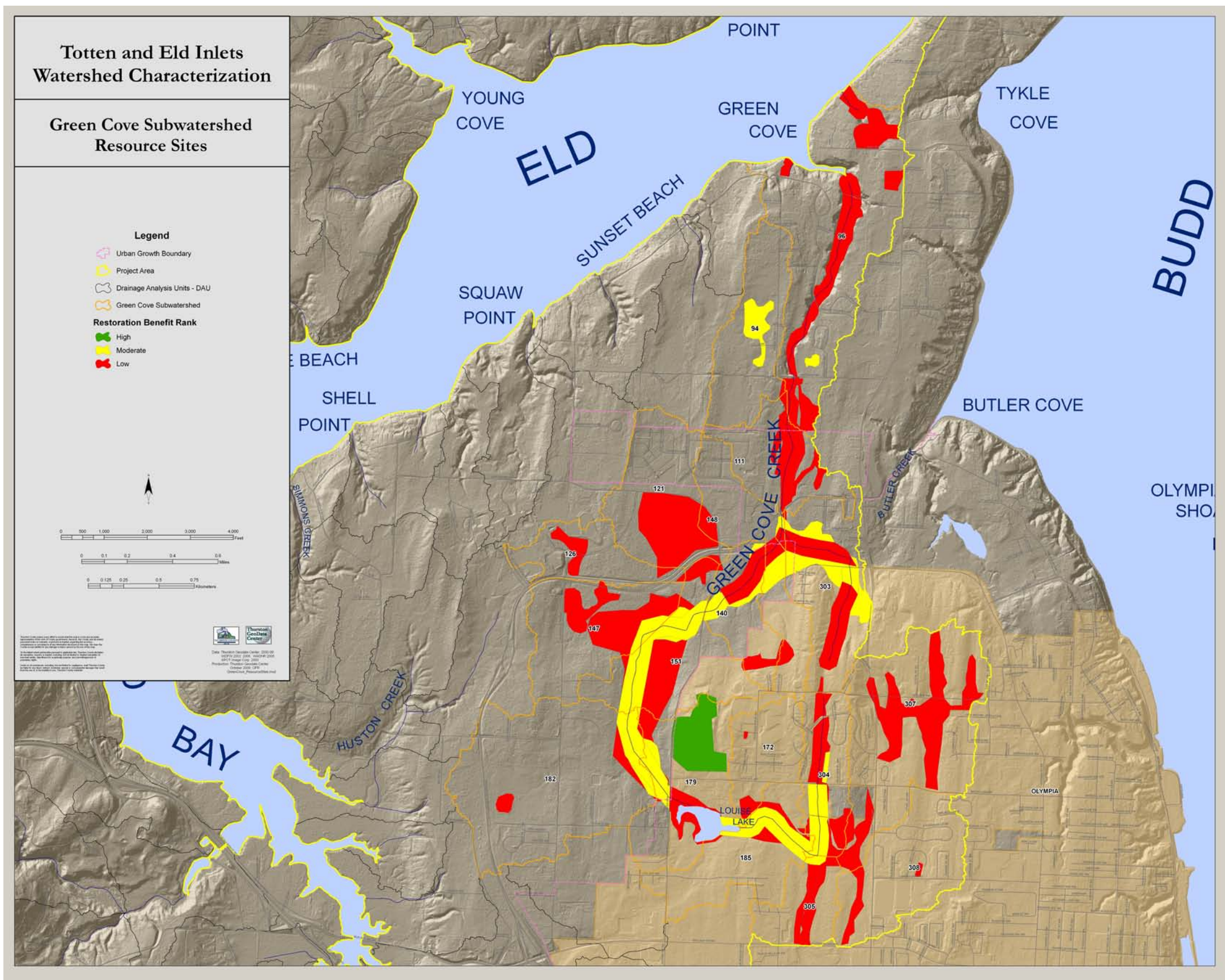
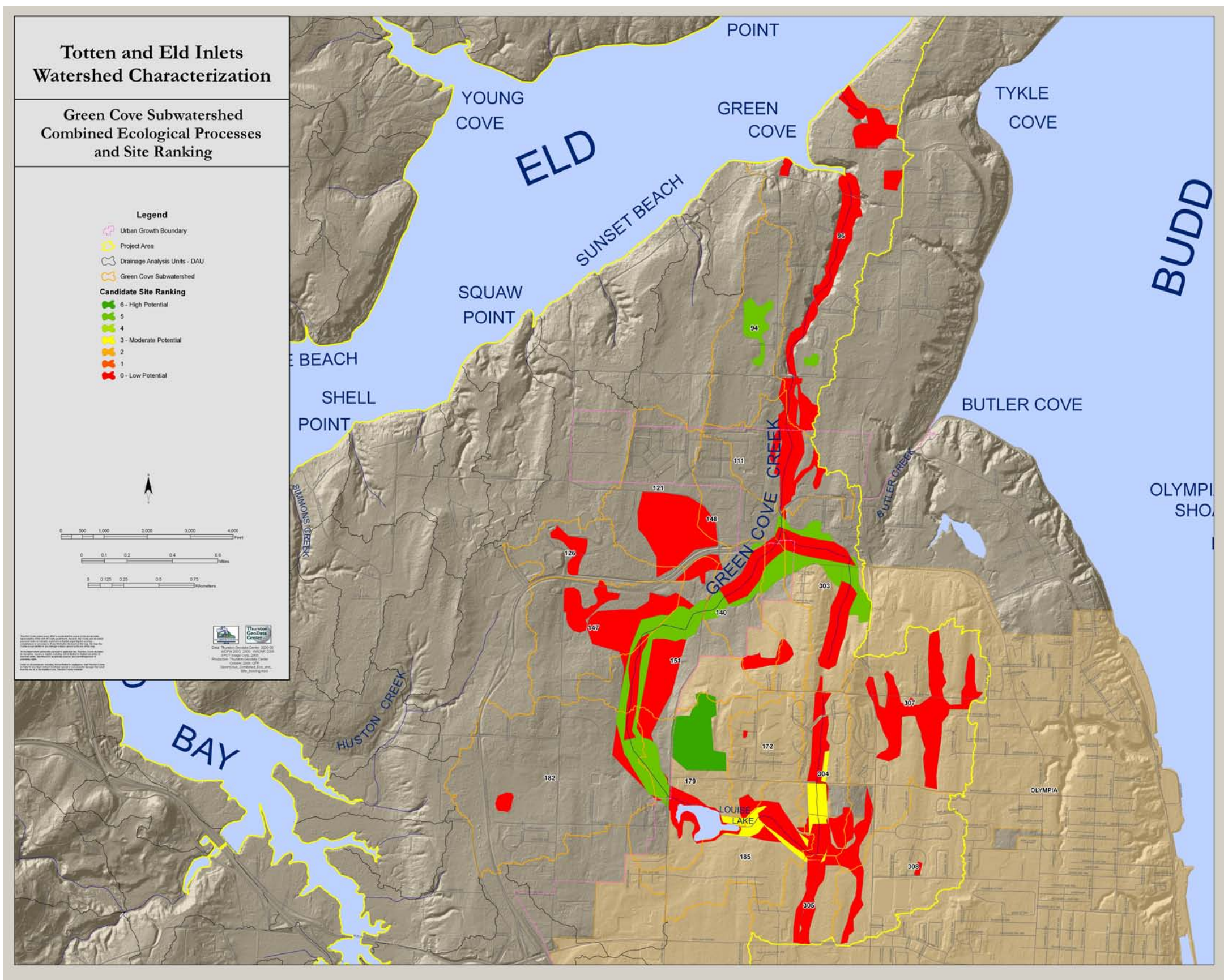


Figure 58 Green Cove Creek Sub-watershed Resource Sites







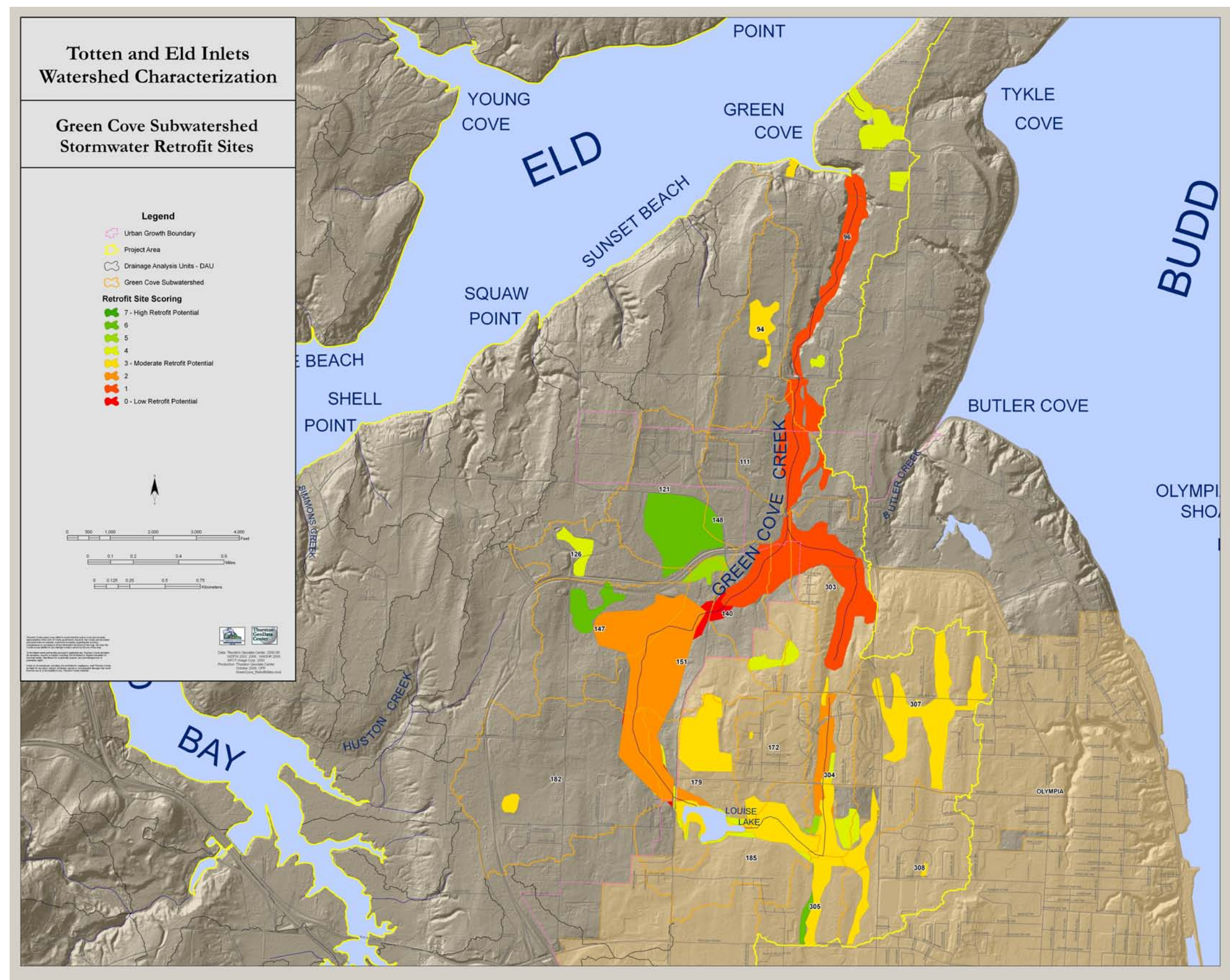


Figure 60 Green Cove Creek Sub-watershed Retrofit Sites